

College Entrance Examination Board
Request for Information (RFI)
#ADED14-0003

Standards-Based Competency Assessments, Grades 3-11

December 4, 2013

Prepared for:

Arizona Department of Education

Respondent Organization

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December 3, 2013

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Regarding: Request for Information (RFI) #ADED14-0003, Standards-Based Competency Assessments, Grades 3-11

Via e-mail

To Whom It May Concern:

The College Board is pleased to submit its response to “Standards-Based Competency Assessments, Grades 3-11” for the Arizona Department of Education (ADE), in response to RFI #ADED14-0003.

The College Board has significant experience collaborating with Arizona schools and districts on both small- and large-scale projects, and is uniquely positioned to provide all students and educators within Arizona with the tools and resources they need to assess students’ academic abilities and progress toward readiness for college and the workplace. Therefore, it is with a strong sense of shared mission and a spirit of collaboration that the College Board offers this response to the RFI #ADED14-0003.

We are confident that ADE will recognize the College Board’s qualifications to provide the resources required to support this bid specification. The College Board is proposing the following resources to meet the needs outlined in this Bid Specification:

1. The College Board’s College and Career Readiness Pathway
 - a. ReadinessStep®
 - b. PSAT/NMSQT®¹
 - c. SAT®

Enclosed please find our written response to RFI #ADED14-0003, meeting the submission specifications.

Thank you for your time and consideration. We look forward to working with you.

Sincerely,



Stacy Caldwell

Vice President, SAT and PSAT/NMSQT

¹ PSAT/NMSQT is a registered trademark jointly owned by the College Board and the National Merit Scholarship Corporation, and should be so noted in all communications.

STANDARDS-BASED COMPETENCY ASSESSMENTS, GRADES 3-8

1. BACKGROUND

A. PROVIDE A BRIEF HISTORY OF THE ORGANIZATION AND ITS GOVERNANCE STRUCTURE.

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT® and the Advanced Placement Program®. The organization also serves the education community through research and advocacy on behalf of students, educators and schools. In addition to its main offices in New York, NY and Reston, VA, the College Board maintains six regional offices to better serve schools and districts nationwide. The Western Regional Office (WRO) serves the state of Arizona, connecting the educators of the state with the staff and resources of the College Board to advance college readiness and success for students in Arizona. The College Board has demonstrated experience in using assessment results to improve college access and completion and integrating the assessment results into coursework aligned to college and career readiness.

College and Career Readiness Pathway

To meet Arizona's state-wide assessment needs, the College Board proposes the **College and Career Readiness Pathway**, which consists of the following assessments:

- ReadiStep®
- PSAT/NMSQT®¹
- SAT®

Annually, millions of students nationwide take the Pathway assessments to help assess academic skills over time necessary for college-level work, identify their potential for success in

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Advanced Placement[®] (AP) courses, enter competitions for scholarships, receive information from colleges, begin college and career planning, and gain entrance to college.

B. IDENTIFY THE INDIVIDUALS FROM THE ORGANIZATION THAT WILL BE WORKING WITH ARIZONA OFFICIALS ON ALL ASPECTS OF THE ASSESSMENTS' IMPLEMENTATION.

The College Board team who will be working with Arizona officials are all existing staff who live or work in the state of Arizona and have extensive, direct experience working with the Arizona Department of Education, Arizona school districts, and Arizona institutions of higher education. Based on the scope of work of the future RFP, the College Board is willing to discuss a staffing plan that best matches Arizona's needs.

The **Program Manager** will be responsible for ensuring that timelines, communications, and deliverables are achieved, and will serve as the direct liaison to the Arizona Department of Education, and the College Board divisions and leadership. The program manager has more than 12 years of experience at the College Board, joining the organization from the University of California, Berkeley. The program manager has been responsible for developing, managing, and maintaining state level service relationships in Arizona in both higher education and K-12, and leading the ongoing statewide implementation of College Board assessments in Oregon and Idaho.

The **Program Implementation Manager** will design and deliver training and technical support directly to districts and school sites and will provide a coherent experience for school districts in the administration of the assessments and use of the data, information, and reports. The program implementation manager has over five years of experience at the College Board, managing professional development and universal assessment programs in multiple Arizona districts and statewide SAT School Day and PSAT programs in Idaho.

The **Assessment Specialist** will be the first point of contact for schools and districts when questions related to data and logistics of the testing process arise. The assessment specialist has extensive experience in data management, the technical aspects of all College Board assessments, and support of statewide assessment implementations.

2. OVERVIEW OF ASSESSMENT

A. DESCRIBE THE ASSESSMENTS, THE GRADES ASSESSED, THE SUBJECT AREAS INCLUDED, AND THE FORMATIVE, DIAGNOSTIC, AND SUMMATIVE COMPONENTS. ALSO DESCRIBE AVAILABLE END-OF-COURSE ASSESSMENTS FOR GRADES NINE THROUGH ELEVEN.

The College Board proposes the College and Career Readiness Pathway suite (referred to as “Pathway” hereafter) as options for the summative components only. The Pathway provides a series of integrated, nationally-normed standardized assessments that measure a student’s college and career readiness throughout high school. They systematically and progressively measure the reading, writing, and mathematical knowledge and skills that are critical for success in college and careers. The suite consists of three assessments:

ReadiStep® provides an early gauge of student skill levels, providing a baseline for monitoring progress over time and can be administered in 8th and 9th grade, giving schools and districts critical information about students’ skills as they make the transition from middle school to high school.

PSAT/NMSQT® serves as a critical checkpoint on the path to college and career success and can be administered in 10th and 11th grades. In addition to providing detailed feedback and tools for improving skills, the PSAT/NMSQT offers scholarship opportunities, college and career planning tools and access to AP Potential™ — a tool that identifies students likely to succeed in AP, helping educators expand access to rigorous courses.

SAT® is not only the culminating step in the Pathway, but also serves as a college admission test, the first step toward higher education for students of all backgrounds. It is globally recognized and rigorously researched to make sure all students have an equal chance to do well. The SAT is usually taken in spring of junior year or fall of senior year to meet college admissions deadlines.

The College Board’s College and Career Readiness Pathway:

- Measures academic progress in grades 8-12
- Provides a wide variety of individual and group assessment results including student performance details, growth data, state and national percentiles and score bands, and college and career readiness benchmark scores
- Provides early testing that yields data on student weaknesses throughout high school
- Delivers actionable feedback that allows teachers to improve curricula and instructional practices
- Predicts success in Advanced Placement Program® course work and exams

- Includes free access to reliable college and career readiness tools and resources

The College Board is undertaking a redesign of the proposed assessments to better meet the needs of students, schools, and colleges at all levels. Through these assessments, the College Board will better connect K-12 and higher education institutions through an innovative, evidence-based approach that sharply focuses on a core set of knowledge and skills essential for college and career readiness. The assessments will take advantage of the most powerful ideas in the Arizona College and Career Ready Standards, thereby more effectively guiding all students in their preparation for the rigors of college and career. Our responses to this RFI represent both current and future assessments.

In the redesign of the SAT, PSAT/NMSQT, and ReditStep, the following design principles will be followed to maintain or improve the alignment to college and career expectations:

- The assessments will measure what really matters as defined by the best available evidence (see Bibliography for references) of what is essential for readiness in postsecondary education and career training programs. There will be visible alignment to the core shifts in instruction that are at the heart of the Arizona College and Career Ready Standards.
- The assessments will measure college and career readiness skills through realistic academic and career-related contexts relevant to a range of college majors and careers.
- The assessments will focus on students' command of evidence—in reading, writing and language, and mathematics—as demonstrated in a broad array of contexts, including literature and literary nonfiction; global/international issues; history/social studies; science; and career-related pathways.
- The assessments will allow students to demonstrate what they have learned and the complex cognitive skills that they can apply to what they have learned in K-12 education.
- Literacy in the real world requires a deep reading and understanding of a wide variety of sources that include both text and data; mathematics in the real world requires sustained chains of reasoning and application. The SAT, PSAT/NMSQT, and ReditStep will showcase problems in which literacy and mathematics unlock insights within rich real-world contexts.

In addition to the redesigned assessments, the College Board is working with teachers to design **instructional models** for grades 6-12 that:

- Offer performance tasks that can be customized to provide indicators for accountability.
- Offer rigorous syllabi, model task assignments, and writing-to-sources open source resource bank.
- Is designed on the literacy and mathematics backbone of SAT, PSAT/NMSQT, and ReditStep.
- Create robust teacher community across disciplines.

B. DESCRIBE THE TIMELINE FOR THE DEVELOPMENT OF THE ASSESSMENTS TO ENSURE FULL IMPLEMENTATION BY THE 2014-2015 ACADEMIC YEAR.

For the 2014-2015 academic year, the College Board proposes the existing Pathway assessments.

C. DESCRIBE HOW, AND THE DEGREE TO WHICH, THE ASSESSMENTS ARE SPECIFICALLY ALIGNED TO ARIZONA'S ACADEMIC STANDARDS IN MATHEMATICS AND ENGLISH LANGUAGE ARTS (READING AND WRITING), INCLUDE ANY ALIGNMENT STUDIES, IF AVAILABLE.

The College Board has a strong history and continued commitment to providing alignment studies conducted using best-practices methodologies. To date, these methodologies have confirmed that the SAT, PSAT/NMSQT, and ReadStep assessments are equally or more aligned to the Common Core State Standards than are any other assessments designed to culminate in college admission and/or placement (<http://research.collegeboard.org/sites/default/files/publications/2012/8/researchreport-2010-5-common-core-state-standards-alignment-readistep-psat-sat.pdf>). Looking ahead to the redesigned SAT, PSAT/NMSQT, and ReadStep, the College Board is using an evidence-based approach that sharply focuses on a core set of knowledge and skills essential for college and career readiness. Significant research into the requirements and expectations for college and career readiness supports key design elements of the redesigned SAT, PSAT/NMSQT, and ReadStep. Much of this research is the very same research that underlies the Arizona College and Career Ready Standards (CCR). A sampling of the research is presented in **the bibliography for section 2A** of this response.

D. DESCRIBE HOW THE ASSESSMENTS' RESULTS CAN BE COMPARED TO OTHER STATES' CRITERION-REFERENCED ASSESSMENTS EXPECTED TO BE IN USE BEGINNING IN THE 2014-2015 ACADEMIC YEAR.

Because the SAT, PSAT/NMQST, and ReadStep are nationally administered assessments, several options can be used to compare student performance at the national and state level. Published normed-based results include performance within score bands, percentiles, and comparison of averages. The College Board's College and Career Readiness Benchmarks provide a criterion-based comparison of student's college readiness. (Note: Detailed information on the College Board College and Career Readiness Benchmark studies can be found in **section 5A** of this response.) State assessment scores and performance levels can be linked to the College Board's national College and Career Readiness Benchmarks to enable comparisons between student performance on state assessments and the College Board's Pathway assessments. The College Board has performed these studies in a number of contexts. Details of prior work can

be found in **section 5E** of this response. These include information on linking with both the State of Arizona, using the Arizona Instrument to Measure Standards (AIMS), and the National Assessments of Educational Progress (NAEP.) The College Board will work with the Arizona Department of Education (ADE) to complete comparison studies with the national consortia or other assessment systems used to measure CCR standards.

E. DESCRIBE HOW THE ASSESSMENTS ARE ALIGNED TO COLLEGE/CAREER EXPECTATIONS. DESCRIBE THE VALIDATION PROCESS, ALIGNMENT STUDIES, IF AVAILABLE.

College Board Pathway assessments are aligned to College and Career expectations in several ways. The College Board has performed extensive predicative validity research with respect to important postsecondary outcomes such as matriculation in a college level program, first year college grade point average (FYGPA), performance in college level courses, cumulative college GPA, and persistence or retention in college.

In addition, the College Board has investigated the concurrent measures of its assessments with respect high school GPA, curriculum studies, and rigor of curriculum. To help states evaluate their students' progress, the College Board has developed College and Career Readiness benchmarks for the PSAT/NMSQT and SAT. More information on the Benchmarks can be found in **sections 2A** and **2B** of this document.

SAT Validity Evidence

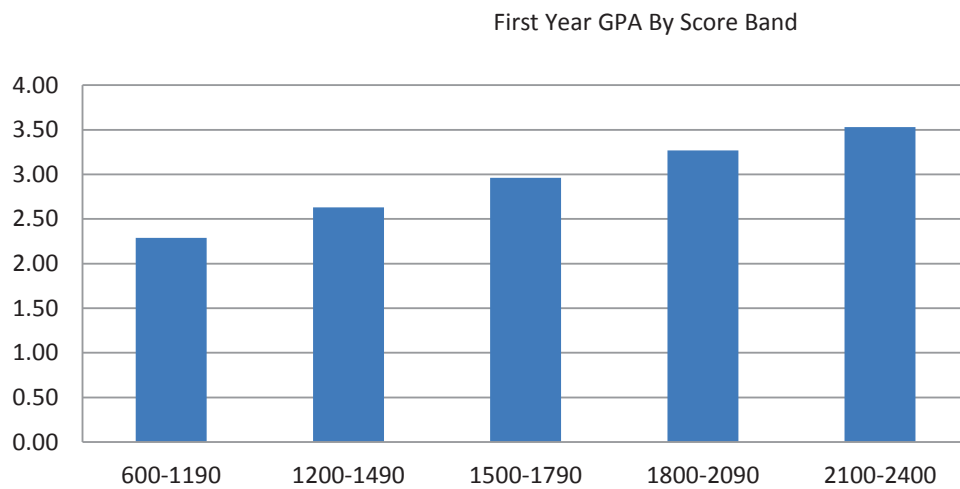
Predictive Validity of the SAT

The SAT's validity rests not only in its ability to predict a student's first year college grades, but its capacity to also predict grades into the later years. SAT scores can also help identify which students are likely to return to college in their second and third years.

College Board research shows that there is a strong positive relationship between SAT scores and a student's FYGPA. The relationship between SAT scores and cumulative GPA remains strong and consistent as students' progress through their college career. As SAT scores increase, so does the likelihood of a student returning for the second and third year of college. Our research shows that there is a strong relationship between SAT scores and a student's first year grade point average in college.

For example, the following figure demonstrates the strong positive relationship between SAT scores and FYGPA. We see that on average students who score in the 2100-2400 range finish their first year of college with a 3.53 GPA, whereas students who score in the 600-1190 range finish on average with a 2.29.

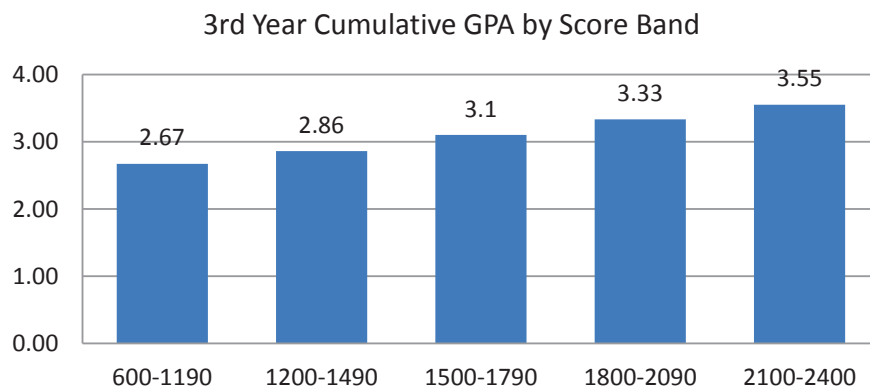
Figure 1. First Year Grade Point Average by SAT Score Band



Grades in Years 2 and 3 of College

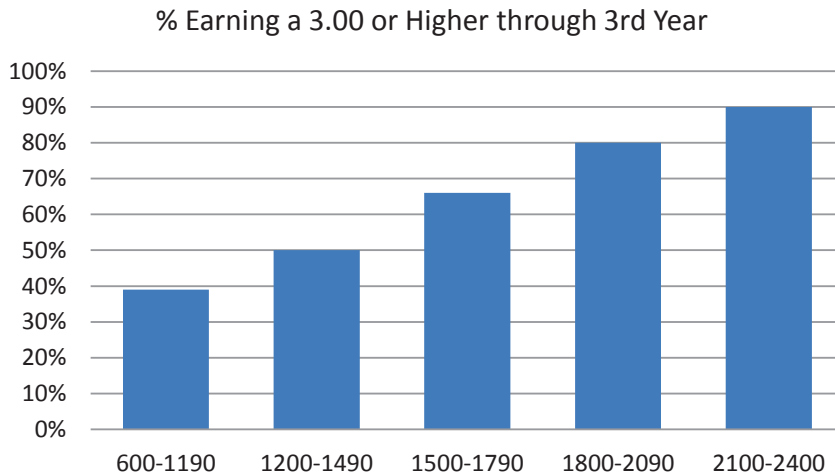
The relationship between SAT scores and cumulative GPA is also strong and consistent as students progress through their college career. Two studies have demonstrated the positive relationship between SAT test scores and cumulative GPA through the second and third year of college (Mattern & Patterson, 2010d, 2010e).

Figure 2. Third Year Cumulative GPA by Score Band



The graph above shows how students in higher score bands have, on average, higher cumulative GPAs through their third year of college (i.e., grades from their first, second, and third years of college combined).

Figure 3. Percent Earning a 3 or Higher Through 3rd Year

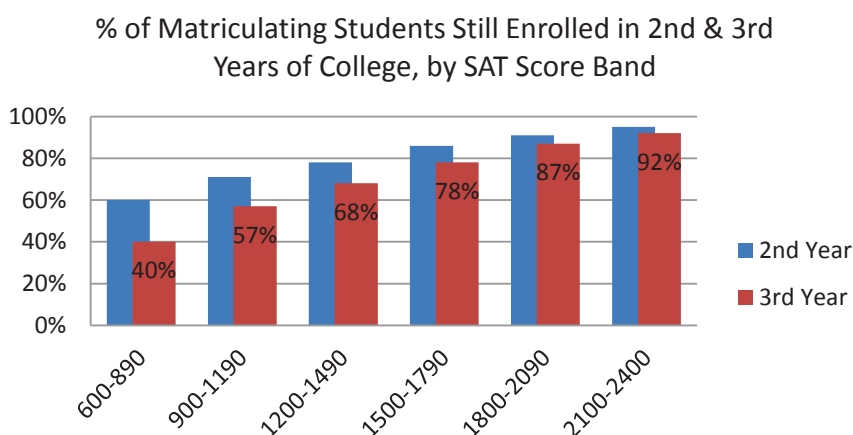


The figure above illustrates a similar finding that students in the same upper score band have an almost 90% chance of earning a 3.00 GPA or higher in the first years of college combined, as opposed to the under 40% of students at the lower end of the score bands.

Retention through Years 2 and 3 of College

SAT scores have been shown to be predictive of which students are likely to persist to their second and third year of college. Research studies on the relationship between SAT scores and college retention consistently reveal a positive relationship (Mattern & Patterson, 2009; 2010a; 2010b; 2010c). As the graph below demonstrates, less than half the students in the lowest score band return for the third year of college, but the retention rate climbs steadily with SAT score.

Figure 4. Percent of Students Enrolled in 2nd and 3rd Years of College by Score Band



PSAT Validity Evidence

Taking the PSAT/NMSQT provides students with an effective way to prepare for the SAT. Extensive research supports the recommendation that students perform better on a test if they know what to expect. In other words, the best way for students to develop “test-wiseness” and reduce test anxiety is to be fully prepared for the kind of test they are going to take (Annis, 1983). Taking the PSAT/NMSQT before taking the SAT provides students with a “snapshot” of what the SAT will be like.

Score Improvements

Many students take the PSAT/NMSQT in the fall of their junior year and the SAT the following spring. Studies showing gains in performance between the PSAT/NMSQT and SAT provide evidence that the PSAT/NMSQT can predict performance on the SAT.

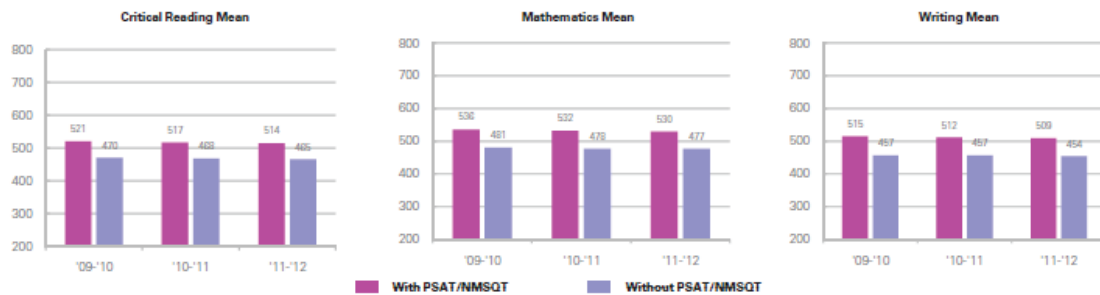
A study compared scores on the PSAT/NMSQT and SAT when both tests were taken during the junior year, the PSAT/NMSQT in October 2007 and the SAT the following spring during the March, May, or June 2008. Administration scores from 585,947 juniors were included in the study (Proctor and Kim, 2010).

Results of the study indicate that on average 2007 junior PSAT/NMSQT test-takers who took their first SAT as a junior in spring of 2008 received SAT critical reading scores that were 17.5 points higher, SAT mathematics scores that were 15.8 point higher, and SAT writing scores that were 22.5 points higher. The correlations between the PSAT/NMSQT scores and the SAT scores are 0.87 for critical reading, 0.88 for mathematics, and 0.83 for writing.

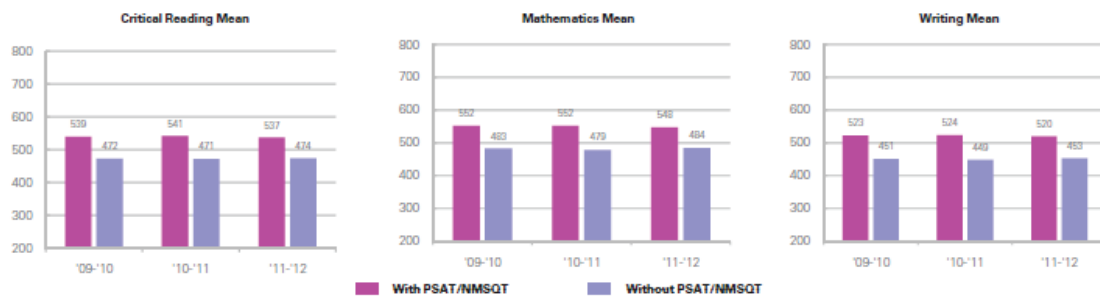
Annually, results have shown that, on average, students who take the PSAT/NMSQT tend to have higher SAT scores than those who do not. These results have been seen nationally, regionally, and by state. The following figure shows the performance differences on SAT between students who indicated that they took the PSAT/NMSQT and those who did not for each of the College Board regions for three cohorts of college-bound seniors (2009-2010, 2010-2011, and 2011-2012).

Figure 5. Three-Year Differences in SAT Performance for Students Who Took the PSAT/NMSQT and Those Who Did Not

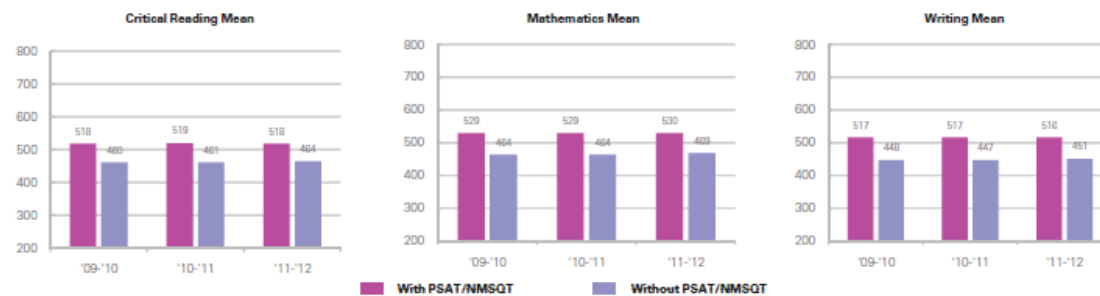
College Board Western Region



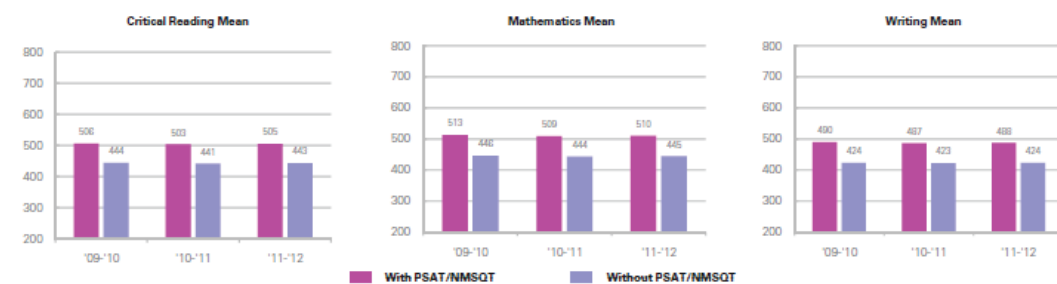
College Board Midwestern Region



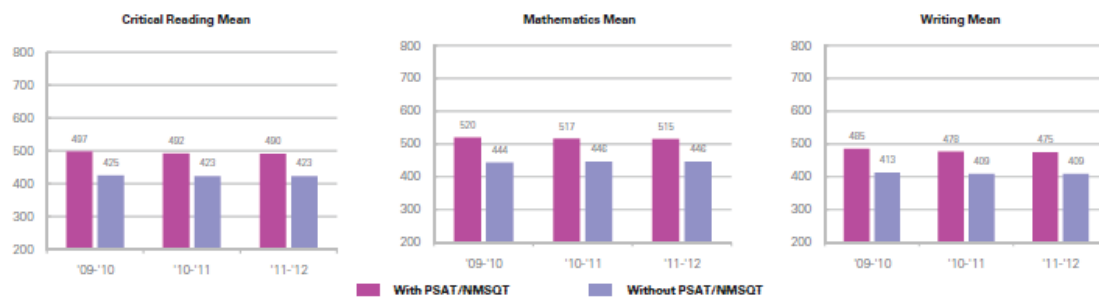
College Board New England Region



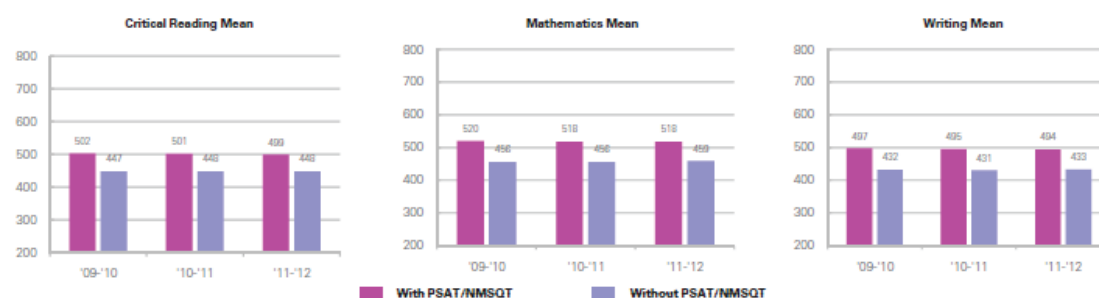
College Board Southern Region



College Board Southwestern Region



College Board Middle States Region



These patterns consistently show performance differences on the SAT between students with and without the PSAT/NMSQT. These results reinforce the predictive value of the PSAT/NMSQT and its relationship to predicting SAT performance.

Advanced Placement (AP)

Another use of the PSAT/NMSQT is assisting schools in identifying students that have the potential to succeed in Advanced Placement courses based on research showing the strong relationship between PSAT/NMSQT and AP performance (Camara & Millsap, 1998; Ewing, Camara & Millsap, 2006; Ewing, Camara, Millsap & Milewski, 2007). The Advanced Placement Program (AP) offers high school students the opportunity to take rigorous, college-level courses while still in high school. Annual AP Examinations use a one to five scale to report results. Colleges set their own AP credit and placement policies; however, **most institutions award college credit or placement into higher-level courses to those students who earn AP grades of at least three or four.**

The expectancy tables used in the AP Potential tool have been updated frequently to include changes to College Board assessments (e.g. the addition of a writing exam) and to include current and additional predictive validity evidence. A list of research supporting AP Potential can be found at the end of this section.

To use the expectancy tables, educators first select the AP Examination of interest and then determine the probability of success that the individual educator feels is appropriate for the school. The success rate is a local decision and there are no absolute rules for selecting the rate. Once the success rate is selected, the educator can then determine the minimum PSAT/NMSQT score that is associated with that success rate.

First-year College Performance

Evidence has shown that the PSAT/NMSQT assesses students' knowledge and skills that are important to success in college based on the strong, positive relationship between PSAT/NMSQT scores and first-year college performance. This finding offers additional, strong evidence in the predictive validity of the PSAT/NMSQT.

In recent research, Hendrickson, Kim, Patel, Melican, Sweeney, & Wyatt (in press) examined the relationship between scores on the PSAT/NMSQT and grades in a student's first year of college. First-year grade-point (FYGPA) averages from college students ($n=167,854$) from 110 colleges and universities nationwide in the 2006-2007 academic year showed a strong, positive relationship of the PSAT/NMSQT to FYGPA. Using a logistic regression, PSAT/NMSQT performance levels predicting FYGPA were established with good confidence levels.

This relationship between the PSAT/NMSQT to first year college grade-point averages substantiates the validity of the PSAT/NMSQT as an assessment of knowledge and skills critical to success in college. The relationship between the PSAT/NMSQT Selection Index and first year college grade-point averages also validates its use as a screening tool for National Merit Scholarship Corporation (NMSC) merit-based scholarships.

F. DESCRIBE THE AVAILABLE ACCESSIBILITY FEATURES, AS WELL AS ASSESSMENT ACCOMMODATIONS FOR INDIVIDUALS WITH DISABILITIES AND ENGLISH LANGUAGE LEARNERS.

The College Board's policies and procedures are designed to ensure that appropriate Pathway testing accommodations are made available to students with disabilities. In the majority of instances, the College Board allows students to test using the accommodations they are provided at their school as indicated by their IEP, 504 Plan, or formal school-generated plan or program. In the remainder of the instances, the College Board works with the student and/or her/his parents and school to determine which accommodations are appropriate.

The College Board's Services for Students with Disabilities (SSD) provides a broad range of accommodations, such as Braille tests, large print, and extended time, to students who provide documentation of a disability. The College Board is committed to ensuring that students with physical or mental disabilities receive appropriate accommodations on its tests.

PSAT/NMSQT and SAT

College Board approval is required to receive accommodations for PSAT/NMSQT and SAT assessments. The earlier students apply, the more likely they will be able to ensure that the College Board receives the information to support their request for accommodations. The approval process is overseen by the Services for Students with Disabilities (SSD) staff. The online portal at www.collegeboard.org/ssd guides the school staff and parents through the process.

In order to be eligible for accommodations a student must:

- Have a disability that necessitates testing accommodations
- Have documentation on file at the school that supports the need for the requested accommodations and meets the Guidelines for Documentation
- Receive and use requested accommodations due to a disability for school-based tests

Students who do not meet all these requirements may still apply directly to the College Board for a College Board Documentation Review. See the *Instructions for Completing the Student Eligibility Form*

(http://www.collegeboard.com/prod_downloads/ssd/eligibility_form_instructions.pdf) or go to www.collegeboard.com/ssd for more information. SSD Coordinators can also contact the College Board by phone at 609 771-7137, by fax at 609 771-7944, or by e-mail at ssd@info.collegeboard.org.

The following examples of accommodations available from the College Board ensure that eligible students get the accommodations they need. Please note these are only **examples**—the list is not exhaustive.

Presentation

- Large print (14 pt., 20 pt.)
- Reader (Note: Reader reads entire test)
- Fewer items on each page
- Colored paper
- Use of a highlighter
- Sign/orally present instructions
- Visual magnification (magnifier or magnifying machine)
- Auditory amplification
- Audiocassette
- Colored overlays
- Braille
- Braille graphs

- Braille device for written responses
- Plastic covered pages of the test booklet

Responding

- Verbal; dictated to scribe
- Tape recorder
- Computer without spell check/grammar/cut & paste features
- Record answers in test booklet
- Large block answer sheet

Timing and Scheduling

- Frequent breaks
- Extended time
- Multiple day (may or may not include extra time)
- Specified time of day

Setting

- Small group setting
- Private room
- Screens to block out distractions
- Special lighting
- Special acoustics
- Adaptive/special furniture/tools
- Alternative test site (with proctor present)
- Preferential seating

ReadiStep

Multiple appropriate testing accommodations can be made when administering the ReadStep assessment. In all cases, the determination of appropriate testing accommodations should be made by the local educational agency in accordance with the accommodations that would typically be made for the student on other assessments. Such accommodations are usually found in the Individual Education Plans (IEP) for students with special needs.

The College Board makes the following special test materials available for accommodations:

- ReadStep™ Test Booklet (Braille Version)
- ReadStep™ Test Booklet (Large-Type Version)
- ReadStep™ Answer Sheet (Large-Block Version)
- Reader's Script for the ReadStep™ Assessment

- Reader’s Script for the ReadStep™ Assessment (Audio CD Version)

Local-Purposes Only Accommodations

Students in Arizona not meeting the College Board approved accommodations requirements will have the option of testing with mutually agreed upon Local-Purposes-Only (LPO) accommodations that are in line with Arizona’s approved Standard Accommodations.

For the PSAT/NMSQT, students using any LPO accommodations will not be eligible for National Merit Scholarship Corporation (NMSC) programs or any other scholarship programs using the PSAT/NMSQT, but will receive standard reports and tools with some potential limitations.

For the SAT, students using any LPO accommodations will not receive official reportable SAT scores that can be used for college admissions, college placement, or scholarship considerations. Students using LPO accommodations will receive the same score reports as regular testers.

English Language Learner and FEP Year 1 and Year 2 Students Specific LPO Accommodations

The College Board will work with the ADE to meet state-required Limited English Proficiency (LEP) testing accommodations, such as an interpreter, translations of the tests, and word-to-word bilingual dictionaries or electronic translators. To ensure the content validity of the PSAT/NMSQT and SAT for measuring the college readiness of students who are planning to enter post-secondary institutions across the nation, the actual tests are provided in English only. The College Board would further recommend that to ensure the content validity for the Arizona state assessment, only the Mathematics test items and related stimulus materials be translated to a foreign language and that the Reading passages and test items and the Writing test passages and items be provided in English only.

G. DESCRIBE ANY PRACTICE AND/OR SAMPLE ASSESSMENTS THAT ARE AVAILABLE.

The SAT, PSAT/NMSQT and ReadStep are significant steps for students on the path to college success. To support schools’ initial student and family communications, the College Board provides schools with a set of free resources that convey the importance of being prepared for the assessments and make suggestions on how to prepare. A complete list of resources can be found at <http://professionals.collegeboard.com/testing>.

Examples of practice materials include:

The free PSAT/NMSQT Official Student Guide which contains:

- Sample test questions with explanations

- Tips and strategies about guessing, pacing, and calculator use
- Descriptions and entry requirements for National Merit Scholarship Corporation programs
- A separate booklet containing a full-length practice test

My SAT Study Plan™ is an individualized plan based on the student's PSAT/NMSQT test performance, highlighting skills for review that are aligned with interactive lessons from *The Official SAT Online Course™*.

The Official SAT Online Course™ is personalized, comprehensive, and available 24 hours a day from any computer connected to the Internet. Students can use the course outline as a syllabus for the classroom or as a guide for self-paced study. The Online Course is provided free of charge as part of a state or district contract.

SAT Online Course Elements and Tools include:

- 18 interactive lessons that help students get ready for the test
- 12 lesson plans to help educators integrate The Official SAT Online Course™ into classroom instruction
- 10 Official Practice Tests with real SAT questions and answers
- 10 auto essay scores per student with immediate feedback
- Personalized score reports with detailed personalized feedback
- Sample student essays that have been written by students complete with explanations

In addition to the SAT Online Course, the College Board offers a **comprehensive set of free online practice tools** available to all students at sat.collegeboard.org/practice

3. COMPUTER-BASED ASSESSMENTS

A. IF APPLICABLE, DESCRIBE THE COMPUTER-BASED OPTION(S) FOR THE ADMINISTRATION OF THE ASSESSMENTS.

The SAT, PSAT/NMSQT, and ReadStep are not available in digital format. Before moving to a digital platform, the College Board wants to be certain that appropriate technology is more widely available to all students and is not a barrier to College Board programs due to student income, race/ethnicity, or school attended. The College Board aims to offer a digital version of the SAT that is an authentic measure of what is important for college and career readiness through a reliable and secure delivery system.

B. IF APPLICABLE, DESCRIBE THE TECHNOLOGICAL SPECIFICATIONS FOR THE ADMINISTRATION OF THE ASSESSMENTS. THIS SHOULD INCLUDE SPECIFICATIONS FOR COMPUTER HARDWARE, INPUT DEVICES, SECURITY REQUIREMENTS, BANDWIDTH, WEB BROWSER REQUIREMENTS, AND PLATFORM SOFTWARE.

When the College Board assessments are available digitally, broadband and computer specifications will follow the RTTT-A consortia technical specifications.

C. DESCRIBE ANY AVAILABLE TRAINING AND TECHNICAL SUPPORT THAT IS AVAILABLE FOR THE COMPUTER-BASED ASSESSMENTS.

N/A

D. IF THE ASSESSMENT IS COMPUTER-BASED IS THERE A PAPER-PENCIL OPTION.

SAT, PSAT/NMSQT, and ReadStep assessments will only be available in paper and pencil format in 2014-2015.

4. ASSESSMENT ADMINISTRATION

A. DESCRIBE THE TOTAL ANTICIPATED TESTING TIME FOR EACH ASSESSMENT (MATHEMATICS, READING, AND WRITING) BY GRADE LEVEL. IF COMPUTER-BASED, INCLUDE THE CALCULATED STUDENT TO DEVICE RATIO.

The SAT and PSAT/NMSQT summative tests are timed tests. Each assessment includes sections in the English language arts domain (reading + writing & language) and the mathematics domain. The same day testing time for each assessment is:

- SAT (Includes an essay): 3 hours and 45 minutes
- PSAT/NMSQT: 2 hours and 10 minutes

ReadStep is a 2-hour test with three multiple-choice sections: reading, writing and math. The test can be given all at once or over three class periods.

The redesigned assessments will not likely exceed 4 hours each.

B. IDENTIFY THE ANTICIPATED TESTING WINDOW FOR EACH ASSESSMENT BY GRADE LEVEL.

While most states currently administer accountability assessments at the end of the academic year, the College Board would like the ADE to consider fall testing. Fall testing provides schools

with the opportunity to evaluate whether high school students are on track for college and career readiness and to take appropriate actions in both the current year and next year.

All three Pathway assessments are available for fall administration, providing several options that allow for optimization of specific educational goals. Based on the specifications of the future RFP, the College Board is willing to discuss a testing window that best meets the ADE's needs.

Fall Assessment Administration Options

Option 1: Focus on Growth – Utilize the full Pathway suite or any combination to measure growth from grades 8 through 12. Tools and resources available to teachers and students can support course selection, focus on student growth, and improve educational outcomes.

Option 2: Focus on Arizona's Move on When Ready Initiative – a fall grade 10 PSAT/NMSQT will provide an early snapshot of a student's progress to meeting the initiative, a CCR measurement, and a prediction of a student's readiness to take on more rigorous courses such as Advanced Placement (AP).

Option 3: Focus on Postsecondary – a fall grade 11 PSAT/NMSQT will give students an opportunity to qualify for a National Merit Scholarship and provide a rich set of tools to engage students in thinking and pursuing postsecondary choices. Because college entrance exams are usually taken starting in spring of junior year, students will have a practice test and time to work on skills to improve SAT scores.

C. DESCRIBE THE TRAINING NEEDS AND AVAILABLE TRAINING FOR TEACHERS AND ADMINISTRATORS PERTAINING TO THE ADMINISTRATION OF THE ASSESSMENTS.

The Western Regional Office of the College Board will help coordinate and deliver face-to-face and/or online training for school administrators, counselors and other educators on the assessments and tools and resources that come with the Pathway. Please see Administration Requirement in **section 5C** for a list of resources available to assist schools in utilizing data from the Pathway assessments.

Pathway Administration Resources and Online Training

To support schools across the state of Arizona to effectively administer and use the information from the assessment results, a series of resources and training sessions will be made available to school staff through various mechanisms, including email, through training, and posted on the College Board website. Materials include tools, resources, practice exams, and lesson plans that enable educators to understand the assessments both individually and collectively, to plan for and deliver the assessments, and to understand and interpret the student results.

Administration materials include manuals for supervisors, educators, registration coordinators, Arizona Department of Education
Standards Based Competency Assessments, Grades 3-11
RFI # ADED14-0003

test center coordinators and other critical roles within schools for effective school day testing. Table 1 provides a detailed list by assessment of the administration and use materials. A series of online training sessions will be available for staff in participating schools to familiarize themselves with the assessments and prepare them for the effective administration of the assessments during the school day. Online Training sessions include:

- Sessions on the setup, administration and score interpretation of all assessments
- Sessions to ensure educators understand the assessments, how they are designed and how to interpret the results

Table 1: Materials for College and Career Readiness Pathway Assessment Administration and Use

Title	Type	Audience	Description
ReadiStep			
The Supervisor's Manual for the ReadStep Assessment	Booklet	Educators	A manual to help support educators with the setup and delivery of the ReadStep assessment.
The Official Educator Guide to the ReadStep Assessment	Booklet	Educators	An outline and explanation of how to plan for, organize, and administer ReadStep.
PSAT/NMSQT			
The Official Educator Guide to the PSAT/NMSQT	Booklet	Educators	An outline and explanation of how to plan for, organize and administer the PSAT/NMSQT. It also includes instructions on how to use value-added tools, which accompany the assessment.
PSAT/NMSQT Supervisor's Manual	Booklet	Educators	Information on PSAT/NMSQT procedures to follow before, during and after the administration, including the test-day script.
Prepare for the 2013 PSAT/NMSQT: A Step to the Future	Power Point	Educators	Prepares students for the PSAT/NMSQT by familiarizing them with key question types and test-taking strategies.
SAT School Day			
This Is Your SAT	Flyer	Students	A quick reference guide to the registration process and the many resources available to students, families and educators, and where to access them.
SAT Registration Coordinator Guide	Booklet	Educators	Overview of timing and counselor activities to support online registration for SAT School Day, includes sample screen shots of registration flow and what students will see during the process. For contracts requiring paper registration, this guide will also contain instructions and the necessary forms.
SAT Online (Student Direct) Vouchers	Card	Students	Vouchers with unique code for registration (sent in quantities based on enrollments).
SAT Paper Registration Materials (if paper registration is selected)	Form, Guide, Booklet	Students	The paper registration guide explains how to fill out the registration form and the SAT code list booklet (1 per school) provides college codes for score reporting.

Test Center Master Form	Form & Instructions	Test Center Supervisors	This form serves as our terms and conditions with the Test Center Supervisor and establishes the school as an official test center.
SAT Services for Students with Disabilities (SSD) Coordinator Guide	Booklet	Educators (SSD Coordinators - individuals who assist students w/ disabilities)	Information for educators about helping students apply for testing accommodations and planning for their testing.
SAT Online Course Welcome Kit	Booklet	Test Center Supervisors	Access code (one per school) to log in to SAT Online Course + information on the benefits of using the course to prepare for the SAT. The SAT Online Course offers: Official Practice Tests & Quizzes, Easy Online Class Management, and Powerful Reporting Tools.
Test Center Supervisor Training Kit	Manuals, Forms, Guides	Test Center Supervisors	Kit contains all materials and instructions to prepare for test day.

5. ASSESSMENT STANDARDS SETTING AND SCORING

A. DESCRIBE THE STANDARDS SETTING PROCESS.

College Board's College Readiness Benchmarks

The College Board developed the College and Career Readiness benchmark as a national indicator of students' college and career readiness. These benchmarks were developed empirically based on the postsecondary performance of a sample of 68,000 students attending 110 four-year postsecondary institutions. The College Board implemented empirical studies to develop the College Board college readiness benchmarks for the PSAT/NMSQT and the SAT. The methodology used to set benchmark for these assessments is described in detail below. The benchmarks themselves are provided in the **section 5B**.

Development

College and Career Readiness Benchmarks indicate the minimum scores necessary for students to have a high probability of success in college courses. These Benchmarks give students and teachers an early indication of whether or not students are on track for college preparedness and success.

The College Board assembled an expert panel of educators and policymakers to participate in a judgmental process to recommend both probability and criterion for defining college readiness. The panel agreed that a probability in the range of 60 to 75 percent would be the most appropriate. The FYGPA criterion of 2.67 was chosen because it represents a B at most colleges and seems appropriate and sufficiently rigorous when considering academic success of freshmen. In addition, the expert panel recommended a FYGPA of a B- as indicative of college success, and six-year graduation as indicative of ultimate college success. While this research

will continue, and the proposed criteria of six-year graduation rate will also be evaluated, it will not be feasible to do so until after the 2012-13 academic year. As the College Board continues to work to evaluate these benchmarks using national data, we will also work with the ADE to develop state-specific benchmarks using similar methodologies.

PSAT/NMSQT

The 11th grade PSAT/NMSQT Benchmarks were calculated using a dataset that included approximately 168,000 students that took the PSAT/NMSQT and SAT exams and had a valid FYGPA. A single logistic regression was used to predict the Composite PSAT/NMSQT score associated with a 65% probability of obtaining a 2.67 or higher FYGPA. The same procedure was then followed for each of the section scores.

The 10th grade PSAT/NMSQT Benchmarks were set using a dataset that included approximately 103,000 students that took the PSAT/NMSQT and SAT exams and had a valid FYGPA. A single logistic regression was used to predict the 10th grade Composite PSAT/NMSQT score associated with a 65% probability of obtaining a 2.67 or higher FYGPA. The same procedure was then followed for each of the section scores.

SAT

The SAT College Readiness Benchmarks were calculated using logistic regression on a sample of approximately 68,000 students attending 110 4-year postsecondary institutions that participated in the 2007 SAT validity study (see Wyatt, Kobrin, Wiley, Camara, and Proestler, 2011). Separate logistic regression equations were estimated for each institution using the SAT Composite (sum of SAT Critical Reading, Mathematics and Writing scores) to predict a binary variable coded to indicate whether FYGPA was 2.67 or higher. Only students' SAT scores from March of junior year through January of senior year were used. The SAT composite score associated with a 65% probability of earning a 2.67 or higher was obtained for each institution. Composite scores at each institution within the range of possible scores (600-2400) were weighted by sample size to compute a single overall Benchmark (1556 rounded to 1550). This process was repeated for each of the three section scores and resulted in rounded scores of 500 on each section. See Wyatt et al (2011) for more information on the development of the SAT Benchmarks.

B. IF ALREADY ESTABLISHED, DESCRIBE THE PERFORMANCE LEVELS AND THE PERFORMANCE LEVEL DESCRIPTORS FOR EACH CATEGORY.

The development of the College and Career Readiness Benchmarks is described in the previous **section, 5A**. The PSAT/NMSWT and SAT benchmarks reproduced on the following page represent scores at which there is a 65% likelihood that a student will attain a B- in FYGPA.

Table 2. The College Board College and Career Readiness Benchmarks

College Readiness Benchmark	Critical Reading	Mathematics	Writing	Composite
PSAT/NMSQT Sophomore	42	44	42	133
PSAT/NMSQT Junior	45	47	45	142
SAT	500	500	500	1550

It is important to note that college readiness is a continuum, and students that score below the SAT Benchmark may still be successful in college, especially with additional preparation and perseverance. As indicated by the *Standards for Educational and Psychological Testing*, multiple measures should be used when making important decisions about individuals. With the information provided by the College Board around the benchmarks, other indicators and benchmarks should be used (e.g., high school GPA and Academic Rigor Index).

Validity evidence associated with the college and career readiness benchmarks have been provided (Wyatt, Kobrin, Wiley, Camara, & Proestler, 2011). Criterion-related validity evidence has been provided from three samples of students with respect to both concurrent high school criteria and other test scores and predictive in college contexts. Table 3 shows that the percent of students who enrolled in a 4-year post-secondary institution and met the SAT Benchmark was substantially higher (78%) than students who enrolled in a four-year post-secondary institution and did not meet the SAT Benchmark (46%).

Table 3: The Percent of Students Enrolled in Postsecondary Education Who Met and Did Not Meet the SAT Benchmark

The Percent of Students Enrolled in Postsecondary Education Who Met and Did Not Meet the SAT Benchmark (Sample 2)				
Readiness Status	Not Enrolled	Enrolled in 2-Yr.	Enrolled in 4-Yr.	N
Met Benchmark	14	8	78	629,552
Did not Meet Benchmark	25	29	46	790,162

Additionally, the FYGPA was examined for this sample of students. The mean FYGPA for students achieving the benchmark was 3.12, compared to 2.57 for those who did not meet the benchmark. (The overall mean FYGPA for all students in Sample 1 was 2.93). The difference in means between the two groups was 0.55 and was statistically significant ($t(40,135) = 92.45$, $p < .001$, $d = 0.78$). The medium-to-large effect size suggests that student attainment of the benchmark score is substantially related to subsequent college performance as measured by FYGPA.

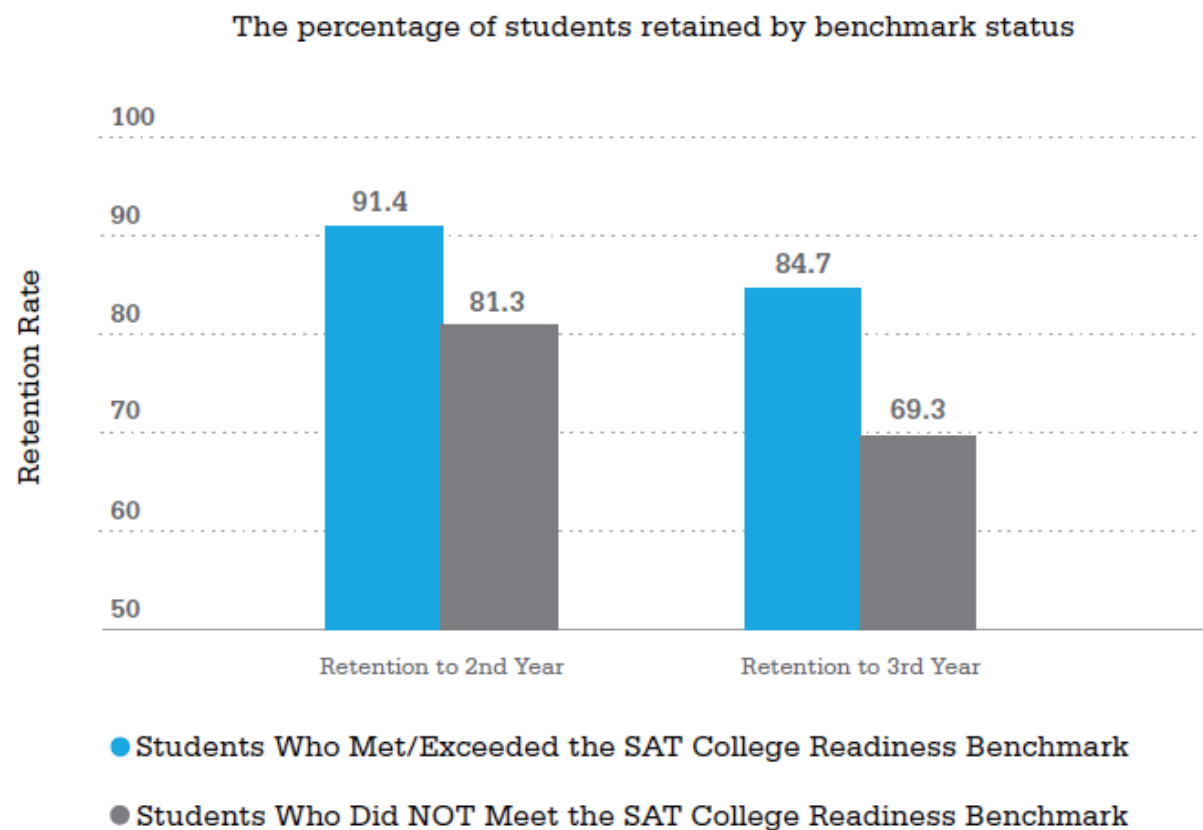
A retrospective analysis was conducted to determine if students who met the SAT College Readiness benchmark had higher academic achievement during high school. Table 4 shows the percent of students meeting the benchmark across a series of other measures of high school preparation and performance. As would be expected, there is a strong relationship between the SAT College Readiness benchmark and these measures of high school performance. For example, when looking at high school grade point average (HSGPA), approximately 9 to 12 percent of students with a HSGPA of C (C+, C, or C-) or lower met the benchmark, compared to over 57 to 84 percent of those with a HSGPA of A (A+, A, or A-).

Table 4: Percentage of the 2010 Cohort that Met the Benchmark by Academic Variables

Percentage of the 2010 Cohort (Sample 3) that Met the Benchmark by Academic Variables			
Academic Variables		Number	Met Benchmark (%)
HSGPA	A+	80,417	84
	A	259,152	71
	A-	265,289	57
	B+	264,280	38
	B	237,944	27
	B-	125,475	18
	C+	83,253	12
	C	46,127	10
	C- or Lower	19,477	9
Curriculum	Non-Core	271,050	29
	Core	959,396	50
Academic Rigor (ARI)	0-5	223,451	13.2
	6-10	411,250	29.2
	11-15	268,145	60.0
	16-20	184,478	82.9
	21-25	63,359	95.1

Retention statistics were also calculated using another sample. 58,287 students from 91 post-secondary institutions with second and third year retention information were compared based on their achieving the SAT benchmark. Figure F shows the percent of students retained to the second and third years. The retention rate to the second year of college was about 10 percentage points higher for students meeting the benchmark compared to that of students who did not meet the benchmark. For retention to the third year, the gap widened to approximately 15 percentage points.

Figure 6: Percentage of Students Retained by Benchmark Status



- C. DESCRIBE THE SCORE REPORTS AVAILABLE TO TEACHERS, STUDENTS, AND PARENTS. THE DESCRIPTION SHOULD INCLUDE:
- How the reports illustrate a student's progress on the continuum toward college and career readiness, grade by grade, and course by course, and

The College Board system will support K-12-driven reporting by providing a rich set of reports that demonstrates a student's progress on the continuum toward college and career readiness. Below are examples of student progress reports. For a complete list of assessment resources, see Table 1 in **section 4C**.

Student Score Report

The College Board provides a variety of reports that assist students and parents in understanding their test scores, and a variety of accompanying resources that are designed to help students and families plan for their future. All students receive an individualized Score Report that helps students and parents understand how ready the student is for college-level work. In addition to test scores, the Score Report gives personalized feedback on academic

skills, and provides information to help students get ready for college, prepare for or improve on the SAT, and understand where they stand within the national norms.

Examples of the data provided cover Critical Reading, Writing and Mathematics:

- Test Scores
- Ranges
- Percentile
- Personalized academic skills evaluation
- Complete set of item responses, item scores, level of difficulty

Counselors can use these reports to guide students as they make decisions about taking high school courses, applying to college, and choosing a major. Colleges and universities can use the SAT reports to make admissions and placement decisions.

College and Career Readiness (CCR) Indicator

ReadiStep (8/9), PSAT/NMSQT (10/11), and SAT (11/12) will have vertically-scaled scores for the English language arts domain (reading + writing & language) and the mathematics domain. Students (and groups) who take the tests will receive a scaled score and an indicator of whether that score is on-target or off-target with respect to the CCR Benchmarks. New Benchmarks will be derived approximately 1.5 years after the redesigned tests are introduced. Concorded scores between the existing tests and the redesigned tests will allow benchmarks to be used in the interim. In addition to composite scores the tests will feature area scores in mathematics and literacy, subscores that focus on important areas of college and career readiness.

College and Career Readiness Longitudinal Growth

Students who take any two or more Pathway assessments (i.e., PSAT/NMSQT in two consecutive years, SAT in two subsequent years, or PSAT/NMSQT and SAT in subsequent years) will receive an estimate of their longitudinal growth in college and career readiness across those years. These growth trajectories across years will be mapped and compared to on-target growth goals.

3-12 College and Career Readiness Growth

The College Board will work with Arizona's 3-8 assessment vendor to build a statistical bridge between the 3-8 assessments and the College Board longitudinal scale so that score trends can be compared across the 3-12 grade span.

My College QuickStart

Unique to PSAT/NMSQT, all students receive free access to **My College QuickStart**, an online, personalized college planning tool that complements the Score Report *Plus*. The tool gives a detailed look at skill performance at both the skill category and the item level, so students can gain a deeper level of understanding of their skill gaps. Students have access to the following tools that support a CCR for all students:

- **My Online Score Report**—an enhanced score report that allows students to review each test question, their answers, and the correct answers with answer explanations
- **My SAT Study Plan**—a customized SAT study plan based on students' PSAT/NMSQT test performance, highlighting skills for review and practice
- **My Personality**—a detailed personality test that helps students learn about themselves and discover majors and careers that fit their strengths and interests
- **My Major & Career Matches**—extensive information about majors and careers, including insights about what to expect and what courses to take now
- **My College Matches**—a starter list of colleges based on students' home state and indicated choice of major
- **AP Potential** – Students will be able to view their current level of readiness for 23 different AP Exams, receive recommendations for AP courses related to their intended major and see which AP Exams were offered at their school last year

Educator resources for MyCollege QuickStart, including lessons plans and parent communications, are available at: <http://professionals.collegeboard.com/k-12/prepare/quickstart/resources>

The College Board will work with the ADE to better understand and support specific state requirements.

- ii. **How the reports are instructionally valuable, easy to understand by all audiences, and are delivered in time to provide useful, actionable data to students, parents, and teachers.**

Reports for all audiences will include composite and section scores, subscores, College and Career Readiness Benchmarks, and growth when available. The reports will be presented by overall organizational hierarchy and select demographic subgroups (gender, race/ethnicity, parental income). Also included are Roster reports that will show students who registered, who attended, their scores, and who sent SAT scores to high education institutions.

In addition to score reports, the College Board provides educators with many online tools and downloadable publications to help students and families make the most of assessment results. One example is **Summary of Answers and Skills**, or SOAS, an online report that may be downloaded and easily shared with administrators and faculty at each school. SOAS includes a

summary of aggregated student performance by school or district on every test question. The SOAS report also provides teachers a look at students' academic skills by aggregating results on questions measuring specific college and career readiness skills. For each test section, the school results, as shown in Table 5, are compared to the state and nation or comparable group* allowing administrators and teachers to adjust curricula and instruction to address areas of weakness.

Table 5: SOAS Summary

Attribute	Description	Application
Score Distribution - boxplots	Typical scores (means and medians), Variability in scores (Standard dev.), Shapes of distributions;	Provides a comparative view of students' overall test section performance
Skill Analysis	A summary of students' performance on the CCR skills tested	Provides insights into students' performance by skill category
Question Analysis	A detailed analysis of students' correct and incorrect responses to each test question	Provides insights for instructional remediation plans
Comparable Group* Analysis	A statistical comparison highlighting anomalies in students' performance on each test question against a sample of students whose overall performance is similar to the reported school's student population	Provides opportunities to improve student learning or identify strengths in curriculum and instruction

** This group is compiled based on performance only, and does not account for attributes like student demographics, geographic region or school size.*

The table below provides a summary of the current score reports and tools provided by the College Board for each of the three assessments.

Table 6: Summary of College and Career Readiness Pathway Assessment Reports by Key Stakeholder

Report type	Key Stakeholders									Recipient
	Student	School	District	State	Teacher	Counselor	Principal	Curriculum Director	Supt, Dist. Admin.	
ReadiStep										
Student Score Report	X	X			X	X				School, Student via School
Summary of Answers and Skills (by school, by classroom)*		X	X	X	X	X	X	X	X	School
School Summary		X	X		X	X	X	X	X	School, District
Student Data File CD		X	X	X	X	X	X	X	X	School, District, and/or State

PSAT/NMSQT									
Score Report Plus	X	X			X	X			School, Student via School
My College QuickStart	X								Student
School Summary		X			X	X	X		School
Roster of Students Scores & Plans		X			X	X	X		School
Summary of Answers and Skills (by school, by classroom)*		X	X	X	X	X	X	X	School, District, and/or State
School Summary		X	X		X	X	X	X	School, District
AP Potential	X	X	X	X	X	X	X	X	School, District, and/or State
Student Data File CD		X	X	X	X	X	X	X	District, and/or State
SAT									
Student Score	X								Student
High School Student Score Report		X			X	X	X	X	School
Online SAT Counselor Registration Report		X				X			School
High School Score Roster		X				X			School, District
Skill Category Report		X	X	X					School, District, and/or State
Test Form Data		X	X	X					School, District, and/or State
Student Item Level Data		X	X	X	X	X	X	X	District, and/or State

*Summary of Answers and Skills reports are only created if there are 25 or more students in the group being reported (by grade level for school, district, state.)

These reports and tools are provided to stakeholders approximately three to eight weeks after the administration of the assessments. With a fall administration, educators will have an opportunity to assist students with performance improvement and course selection, and evaluate curriculum and instruction in time for possible adjustments for the upcoming school year. Further information can be found at <http://pathway.collegeboard.org/data-and-reports/tools-and-resources>.

D. DESCRIBE THE PROCESS AND TIMELINES FOR SCORING THE ASSESSMENTS. INCLUDE COMPUTER-BASED AND PENCIL/PAPER PROCESSES AND TIMELINES, AS APPLICABLE.

All of the ReadStep, PSAT/NMSQT, and SAT mathematics (including PSAT/NMSQT & SAT student-produced responses), critical reading, and writing questions, except the SAT essay, are machine-scored. Each student answer sheet is optically scanned and converted to a digital file. These digital files are processed by computer, comparing the student response to each item with the official scoring key to determine the number of questions answered correctly, the number answered incorrectly, and the number omitted.

A Score Key Management (SKM) system maintains the item keys and test scoring specifications. Designed to assure the accuracy of scores, this system manages answer keys, scoring specifications, conversion tables, and the actual scoring software used in the analysis and scoring of tests. This approach assures that information and logic required for scoring and analysis is applied accurately and reliably across a wide variety of platforms and products.

The SAT writing essays are scored by experienced high school teachers and college faculty members who teach either English or another subject that requires a substantial amount of writing. To be considered for the position of essay reader, a person must

- hold a bachelor's degree or higher
- teach or have taught a high school or college level course that requires writing
- have taught for at least a three year period
- reside in the continental United States, Alaska, or Hawaii;
- be a U.S. citizen, a resident alien, or authorized to work in the U.S.

Assessment results are expected approximately three to eight weeks after test administration.

E. DESCRIBE HOW SCORES ON THE ASSESSMENTS WILL BE COMPARABLE TO OTHER COMMON COLLEGE/CAREER READY ASSESSMENTS.

The College Board has performed a number of studies linking Pathway assessments to other assessments of college and career readiness. Below, we provide examples of studies performed previously (referenced in **section 2D**). The College Board will continue to perform enabling comparability of national and State assessments of College and Career Readiness.

Arizona's Instrument to Measure Standards (AIMS)

The College Board had conducted a series of studies for and on behalf of the ADE. Each study in the series was conducted for the purpose of examining the relationship between student performance on the Arizona state assessment-known as Arizona's Instrument to Measure Standards (AIMS)-and student performance on College Board assessments. As part of this effort, researchers examined the alignment of these tests in terms of content, identified the

differences between the assessments, and examined the statistical relationship between the tests.

The analyses provided to the ADE were intended to help the ADE consider the appropriateness of using the AIMS proficiency levels to identify students who can be considered college ready. By comparing the AIMS performance levels to a valid external college readiness benchmark, the ADE could understand whether the same extent of rigor exists in their proficiency levels. The analyses in this report compare the AIMS proficiency levels with the 10th Grade PSAT/NMSQT (P/N) College Board College Readiness Benchmarks to understand the likelihood of meeting or exceeding the College Board Reading and Mathematics College Readiness Benchmarks at each AIMS performance level grades 3 through 8, and 10.

The College Board received six years of AIMS test-taker data. The files contained students who were Arizona public school sophomores in 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, and 2011-2012 academic years and who had taken the AIMS during the spring administration of that year. The purpose of this study was to examine the comparable scores on the AIMS reading and mathematics and the 10th grade PSAT/NMSQT, therefore only the 2006-2007, 2007-2008, and 2008-2009 AIMS administrations were examined.

Comparable scores were derived using two methods; the borderline group methodology and logistic regression. The borderline group methodology (Crocker & Algina, 1986; Livingston & Zieky, 1982) has been popularized in the standard-setting literature and is based on the notion that the passing score (or benchmark) on the AIMS is the score that would be expected from a test-taker whose skills are “on the borderline” in terms of their performance on the PSAT/NMSQT. Thus, the borderline group consisted of students whose PSAT/NMSQT scores fell within one standard error of measurement above and one standard error of measurement below the PSAT/NMSQT benchmark score. Based on this methodology, the mean score on the AIMS for the borderline group is the score that is equivalent to the PSAT/NMSQT benchmark. Logistic regression was also used to derive scores on the AIMS that are comparable to the PSAT/NMSQT sophomore benchmarks. Specifically, the minimum AIMS score at which a student would have a 50 percent likelihood of obtaining the PSAT/NMSQT sophomore benchmark and the AIMS score at which a student would have a 65 percent likelihood of obtaining the PSAT/NMSQT sophomore benchmark were calculated.

National Assessment Governing Board Linking Study

Recently, the National Assessment Governing Board (NAGB) has undertaken studies using the SAT to develop college and career readiness benchmarks for NAEP (Moran, Oranje, Freund, 2012). NAGB found that performance at the 12th grade NAEP proficient level represented a likelihood of scoring 500 or higher on the SAT Mathematics and the SAT Critical Reading, which are college readiness benchmark for each SAT test.

NAGB found that there was a strong correlation with NAEP and the SAT. Though the correlation was stronger with mathematics ($r=0.91$) it was also strong with critical reading ($r=0.74$).

SAT and ACT Concordance Study

The ACT and the SAT are different tests that measure similar but distinct constructs. A concordance study was conducted to compare the SAT and the ACT. Concordance studies do not equate scores on different tests. Concordance tables relate scores on test Y to scores on test X. Scores on nonparallel tests that are linked via concordance tables should be described as “comparable” rather than “equal” (Marco, Abdel-fattah & Baron, 1992). The concordance study resulted in a table that can be used to understand the scores on each assessment that are related to one another.

Concordance tables between the ACT and the SAT are used for a variety of purposes. They are a useful tool for admission counselors who need assistance in comparing scores submitted on both tests. High school guidance counselors use concordance tables for individual counseling purposes (e.g., to advise students concerning potential colleges and universities). College admission counselors can use a concordance table between scores on the SAT and ACT to assist admission or selection decisions, scholarship determinations, or placement options. NCAA eligibility, often based on ACT scores, might be determined from an individual’s SAT score.

Detail on the concordance study and tables can be accessed from:

<http://research.collegeboard.org/programs/sat/data/concordance>

6. ASSESSMENT DEVELOPMENT

A. DESCRIBE HOW THE DEVELOPMENT OF THE ASSESSMENTS WILL ADHERE TO THE PRINCIPLES OF UNIVERSAL DESIGN, SO THAT THE TESTING INTERFACE, WHETHER PAPER OR TECHNOLOGY-BASED, DOES NOT IMPEDE STUDENT PERFORMANCE.

The College Board utilizes a test development process that takes into consideration all delivery formats for which the items are intended. Universal Design principles are at the core of such development. To ensure validity, the College Board has an Advisory Committee on Research which meets twice annually to review the adequacy of the College Board’s testing programs. This Advisory Committee will review all significant technical requirements and proposed solutions in relation to the psychometric and assessment work required by any potential proposal. The Advisory Committee’s reviews and recommendations are taken into account for any updates to the test development process.

During the item development process, there are a series of technical and fairness reviews performed against the items. This includes third party examination of the items, as well as field testing to determine performance.

The general process for undertaking the development and review of items is detailed in this section. Each assessment, however, has some modifications to the process which are necessary due to the specific nature of each assessment. For the most part, the number of uses involved and the demand for more forms creates more processes and steps.

Item Development and Review Process

Detailed content and statistical specifications for each content area define the parameters that ensure that each form is comparable to all other forms and ensures appropriate content and psychometric representation. That is, the detailed test specifications and statistical procedures ensure that different forms of the same test developed both within each academic year and across years are parallel in content and difficulty, thereby enabling score users to compare scores obtained from different test administrations.

Each new form of a College Board test is developed through a multi-stage process that spans many months. The basic steps are similar across content areas and tests although the details of the process may vary somewhat among them. Significant variations will be noted here as appropriate. The development process draws on the skills of content experts, psychometricians, and experienced educators in order to repeatedly develop new forms that are parallel to each other, that are fair to students, and that test the reasoning skills important to academic success in college.

Highly qualified test development specialists work closely together to develop items for all of the College Board assessments. Some of the items are based on ideas from high school and college faculty and other qualified consultants. Faculty and consultants are selected for their knowledge of curriculum and for their expertise in a field. In general, the staff members who work on a particular test are subject matter specialists who have either high school or college teaching experience. In writing items, these people are guided by the content and statistical specifications for the particular portion of the test on which they are working.

Because there are a high proportion of questions on the critical reading sections, potential reading passages are first chosen and reviewed for suitability before any passage-based items are written.

Each newly written item (or set of items) is classified according to the appropriate category of the specifications. It is reviewed to maximize clarity and to eliminate ambiguity. It is further reviewed for sensitivity to members of gender and racial-ethnic subgroups. Each item is also examined to make sure that it has only a single correct answer (the SPR items in Math may

have more than one possible answer or have more than one way to express the answer). During the review process, items may be discarded, accepted, or revised to eliminate ambiguity, improve the wording, strengthen the correct answers, and so forth.

Before any item is pretested, every item goes through a sensitivity review to ensure that it is appropriate for all relevant demographic characteristics of the examinee expected to take a College Board test. The implementation of these reviews is based on the *ETS Guidelines for Fairness Review of Assessments*. While these guidelines apply to all test takers, the groups of primary concern are defined by the following: Age, disability, ethnicity, gender, national or regional origin, native language, race, religion, sexual orientation, and socioeconomic status.

Every item used in an operational test has previously been pretested. Each item is tried out with an appropriate group of students to make sure that it is not ambiguous or confusing and to determine the difficulty level and the degree to which it differentiates more or less able students. The pretest responses are also analyzed to determine whether students of different racial-ethnic groups, or gender groups, respond to the question differently. Each pretest is administered as the unscored section of some fraction of all operational tests administered on a particular date.

With respect to the essay prompts on the SAT Writing, prompts are reviewed by subject matter experts on staff at both the College Board, as well as by several members of the SAT Writing test development committee. After all concerns raised during the reviews are resolved, the essay prompt is pretested in a special administration in high school English classrooms. For each group of pretests, a diverse sample of schools is invited to participate by having students respond to a particular prompt during their English class. A sample of at least 300 responses to each essay pretest prompt is obtained in order to provide a wide range of essays for determining whether the question is accessible to students and to provide exemplars of various levels of writing competence for use in the scoring process.

Data collected from pre-testing are then psychometrically analyzed using statistical information related to item difficulty, item discrimination, and differential item functioning (DIF). The statistical information provides quantitative information on the quality of the items. Based on the purposes of the tests informed by best practice and the Standards for Educational and Psychological Testing, criteria for evaluating these statistics for each item are used as part of this aspect. These statistics are also reviewed to ensure that they are consistent with the psychometric specifications indicated.

DIF analyses begin by examining any differences in the performance on each individual item of two comparable groups, referred to as the reference group and the focal group.

The Mantel-Haenszel (1959) procedure (MH), adapted by Holland and Thayer (1988), is used for DIF analyses with the SAT. This procedure computes a ratio for the conditional probability of successful reference group performance on an item over the conditional odds of successful focal group performance on the item for each score level on the test. Thus, comparisons are made of test takers with equivalent scores (e.g., equivalent proficiency in mathematical reasoning) at each point on the test. Statistically optimal weights are then assigned to each ratio, and they are averaged across all score points. The MH statistic is transformed to the delta (Δ) scale described above, and the resulting statistic is referred to as the Mantel-Haenszel delta DIF (MH D-DIF). The MH D-DIF statistic ranges from negative infinity to infinity, with a value of 0 indicating no DIF. Both the magnitude of the MH D-DIF and a significance test are used to evaluate the presence or absence of DIF. For the SAT, MH D-DIF values are classified as follows:

- Negligible if they are between 1.0 and -1.0 or are not statistically different from zero at .05 significance level
- Moderate if they fall between 1.0 and 1.5 or -1.0 and -1.5 , or if they are greater than 1.5 or -1.5 and not significantly different from 1.0 at the .05 significance level
- Sizable if they exceed 1.5 or -1.5 and are statistically different from 1.0 at the .05 significance level

Items exhibiting sizable DIF are not included when a test is assembled. Items exhibiting moderate DIF are usually not selected for a final form unless items with negligible DIF are insufficient to meet particular specifications. The average DIF for each group comparison is constrained to be approximately zero across all test items in a form when an internal matching criterion (e.g., total test score) is used.

When items and prompts pass these qualitative and quantitative reviews, forms are assembled by test developers according to the test specifications.

These forms are reviewed by another test developer to ensure the quality and that the test specifications have been achieved.

There is, again, a review of the test with regard to whether it portrays members of gender or racial ethnic groups in a sensitive manner and avoids stereotypes. Individual items are reviewed to ensure clarity and lack of ambiguity and the test as a whole is reviewed to make sure that it is comparable overall to other forms. After the resolution of these reviews, the draft test is ready to be reviewed by test development committees.

Each draft test is reviewed independently by a substantial number of specialists. Members of the test development committees for each area of the test review and discuss each new form of the test. These reviews are done both by mail and at the site of the committee meeting. The

reviews by mail provide a time for consideration and reflection on each question and the test as a whole, plus an opportunity for a reviewer to check a reference or to make sure that no wrong answer on a multiple-choice question can be successfully defended as correct. The on-site reviews provide the opportunity for a reviewer to experience the test in much the same fashion as a student, i.e., with time constraints and a sense of pressure. The concerns identified during the review by committee members are discussed in committee and with staff members. Each concern must be resolved before the test moves into production and printing for its scheduled administration.

For any given form, there will be multiple variations for security reasons and to accommodate the pretest/equating sections. Preparing print-ready copy for each of these distinct test booklets takes several months. Each distinct booklet must be carefully proofread to ensure that it has the correct sections in the correct sequence, and that no typographical errors have been introduced in the composition process.

The actual printing of test books and answer sheets is done at one of the few printers equipped to protect the security of the tests, to handle the collation of test form variants, and to package and ship the test books and answer sheets to the appropriate test centers and/or schools.

A number of further checks are made after the administration of the tests and also after the reporting of students' scores. A Preliminary Item Analysis of the responses is done on a sample of the students taking the test. The results are used to make sure that each question did "behave" as expected in terms of the level of difficulty and its ability to differentiate between more and less able students. Items are again analyzed for differential item functioning among subgroups of the population. All reports from test centers of student complaints of ambiguity or incorrectness are reviewed. If the complaint is valid, appropriate action, e.g., drop the item from scoring, will be taken.

After the preliminary analyses and the work of equating the current form(s) to baseline forms have been completed and the essays have been graded (if applicable), individual tests are scored and reports are issued to the students, their schools, and the colleges that have been designated.

ReadiStep

The ReadiStep item development process includes a rigorous review to ensure that all items are unbiased and of high quality. External and internal committees assist item reviews to ensure that items are not biased in language, concepts, and other important aspects. Differential item functioning analyses were also conducted after each pilot study to further screen items. Items showing significant DIF were removed from operational forms. This process (i.e., the DIF

analyses in combination with committee bias reviews) and documentation provides strong evidence that the ReadStep assessment does not exhibit bias towards subgroups.

PSAT/NMSQT

The PSAT/NMSQT item development process includes a rigorous review of all items to ensure they do not demonstrate any bias toward subgroups. The item review process includes a review by external committees that represent the various subgroups to ensure items are not biased in language, concepts, and other important aspects. Differential item functioning, or DIF, analyses are conducted to further screen items for bias. DIF is conducted on items during the pretesting of the item (i.e., before the item is used as part of a score a student receives). Items that display DIF are removed from the item pool and not used. Once items are in an operational form and administered a DIF analysis is again performed.

SAT

Items on each form of the SAT are analyzed for differential item functioning (DIF) for gender and ethnic/racial subgroups where sufficient sample size is available. Items exhibiting severe DIF are not used on an operational form of the test and items exhibiting moderate but acceptable DIF are only used when it is absolutely necessary to meet the content specifications for the test form.

B. DESCRIBE ANY COMPARABILITY STUDIES BETWEEN THE PAPER/PENCIL AND COMPUTER-BASED ASSESSMENTS.

N/A

C. DESCRIBE THE PROCESSES FOR ITEM DEVELOPMENT. THE DESCRIPTION SHOULD INCLUDE:

- i. **How the reading and writing items will require students to demonstrate a range of higher-order, analytical thinking and performance skills in reading, writing, and research based on the depth and complexity of the standards, allowing robust information to be gathered for students with varied levels of achievement; and**

Reading and Writing items developed for College Board assessments target nine specific craft components: Domain definition, focus, difficulty, cognitive complexity, “Best-answer” criterion, context-based decision making, soundness of key, plausibility of distractors, and parallelism of options. These areas of focus are designed to develop items that target a student’s higher-order, analytical thinking, and performance skills. **See *Confidential and Proprietary Information by Section* for further details.**

- ii. **How the mathematics items will require students to demonstrate a range of performance based on the depth and complexity of the standards, allowing robust information to be gathered for students with varied levels of achievement.**

Test items work together to address seven components including *Craft, Focus, Transparency, Relevance, Command of Evidence, Demonstrated Achievement*, and *Rich Applications*. No one item can address these components but a well-designed form of test items can accomplish the intention of all components in a single administration. **See *Confidential and Proprietary Information by Section* for further details.**

D. DESCRIBE THE PROCEDURES USED TO ENSURE ALL TEST ITEMS ARE PROPERLY ALIGNED TO APPLICABLE STANDARDS AND AVOID BIAS. INCLUDE THE ROLE OF STATE REPRESENTATIVES IN THESE PROCESSES.

The SAT, PSAT/NMSQT, and ReadStep are national assessment programs designed to serve the needs of all students. To ensure that the assessments are fair and sensitive to all students, the College Board strives to include educators who are expert in the content and pedagogy relevant to the assessments and who are familiar with the diversity of students across the nation are invited to participate in various stages throughout the process, including writing the test questions; reviewing the test questions for content relevance, accuracy, and appropriateness; and reviewing the test questions and test forms for fairness and sensitivity to all students. The College Board encourages all Arizona educators who are content experts and who are knowledgeable and familiar with the diversity of the nation's students to participate in the development of test forms. **The College Board will provide an application process for Arizona educators to apply to participate in the future development of test forms.** Having Arizona educators participate in the development process helps the College Board to ensure fairness and sensitivity to all Arizona test takers and provides Arizona educators with the knowledge and information they need to confirm the validity and integrity of the test development process.

Fairness Review: Background

All tests developed by the College Board undergo a rigorous Fairness Review based on published guidelines to help ensure the test questions are fair to all test takers.

The guidelines are regularly updated to reflect the evolving nature of fairness issues and societal views.

E. DESCRIBE THE PROCEDURES FOR ONGOING ASSESSMENT ITEM DEVELOPMENT, INCLUDING PROCEDURES TO ACCOMMODATE ANY FUTURE MODIFICATIONS TO THE RELEVANT ACADEMIC STANDARDS.

The College Board continually examines and refines its assessment development based on curricular study and educator involvement in College Board assessment development. Ongoing review of the state of K–12 and college curricula is a standard part of the Pathway assessment development process. The College Board periodically conducts curriculum surveys to gather information on the curricula and institutional practices of high schools and colleges in the United States. The primary objective of such surveys is to collect data on the knowledge and skills, or topics, taught in high school classrooms and assess the importance of these topics for institutions of higher education. The results of the curriculum survey allow the College Board to validate and ensure that the topics measured on the SAT reflect what is being taught in the nation’s high schools and what college professors consider to be required for college success. In addition, the results inform the ongoing refinement of the test specifications and item development for all Pathway assessments.

The College Board involves external stakeholders and experts in the review of items and forms. These experts provide additional insight into K-12 and postsecondary expectations. Through the engagement of these experts, the College Board has an ongoing, in-depth conversation with K-12 and Higher Education stakeholders about what to assess and how to best assess the most important indicators of college and career readiness. Key contributors to College and Career Readiness Standards have been at the head of the table in redesigning the SAT and PSAT/NMSQT. This involvement in the development, and ultimately implementation stage of standards development is a key driver within the College Board’s current and future vision. The same researchers, and developers involved in definition of future standards participate in the item development process. That involvement ensures that there is true adherence with not only the specifics of the standards, but the contextual intent as well.

F. DESCRIBE FIELD TESTING PROCEDURES AND TIMELINES FOR THE ASSESSMENTS. INCLUDE INFORMATION REGARDING FIELD TESTING OF ARIZONA STUDENTS, IF APPLICABLE.

Field testing is conducted utilizing an embedded format. Each administration consists of form specific operational items, cross form anchor items, and pre-test items under review. Pre-test items are used to establish an inventory of items for the development of new test forms. Arizona students will be represented in field testing within this format as part of the assessments delivered in Arizona. Should the College Board update the field testing process, Arizona students will be actively included in the population of any such testing.

7. ASSESSMENT COST

A. DESCRIBE THE PRICING STRUCTURE INCLUDING THE COST PER STUDENT.

Pricing for the Pathway assessments varies based on volume, multiple versus single assessment purchase, desire for customized work, etc. Standard reports and tools described in this document are included in the price per student presented below.

Price/Student

SAT - \$45.50

PSAT/NMSQT - \$11 to \$14

ReadiStep - \$7 to \$8

Pricing is subject to change in response to future RFP specifications. The included prices for College Board tests, services and deliverables are based on the proposed prices for the 2013-14 school year. Any references to prices for subsequent years are solely for projection purposes and may be subject to change based on the College Board's then-current costs, policies and procedures.

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